

## Try It Yourself

There are 20 balls, numbered  $1, 2, \dots, 20$  in a jar.

You'll draw out a size-three subset. (i.e. without replacement)

$\Omega = \{\text{size three subsets of } \{1, \dots, 20\}\}$ ,  $\mathbb{P}()$  is uniform measure.

Let  $X$  be the largest value among the three balls.

If outcome is  $\{4, 2, 10\}$  then  $X = 10$ .

Write down the pmf of  $X$

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## Try it yourself

What is the CDF of  $X$  where

$X$  be the largest value among the three balls. (Drawing 3 of the 20 without replacement)

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## Expectation & Variance

### Expectation

The "expectation" (or "expected value") of a random variable  $X$  is:

$$\mathbb{E}[X] = \sum_k k \cdot \mathbb{P}(X = k)$$

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## Try it yourself

Let  $X$  be the result shown on a fair die. What is  $\mathbb{E}[X]$ ?

Let  $Y$  be the sum of two (independent) fair die rolls. What is  $\mathbb{E}[Y]$ ?

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